

AMENDMENTS TO THE CLAIMS

The Listing of Claims will replace all prior versions, and Listing of Claims in the application:

LISTING OF THE CLAIMS

1. (Currently Amended) A conversion coating bath including a coating composition comprising:

chromium (III) ions,
cobalt (II) ions, and
nitrate ions,

wherein said composition is acidic, includes a ratio of nitrate ions to the combination of chromium (III) and cobalt (II) ions of less than 1.5:1, is substantially free of chromium (VI) ions, and is substantially free of oxidizing agents other than said nitrate ions.

2. (Original) The bath of claim 1 further comprising water.

3. (Original) The bath of claim 1 further comprising sulfate ions.

4. (Original) The bath of claim 1 further comprising a film polisher.

5. (Original) The bath of claim 4 wherein said film polisher comprises fluoride salts.

6. (Original) The bath of claim 1 having a pH between 1.5 and 3.0.

7. (Previously Presented) The conversion coating bath of claim 1 further comprising about:

0.020 to 0.075 mole/L chromium (III) ions,
0.010 to 0.035 mole/L cobalt (II) ions, and
0.010 to 0.045 mole/L nitrate ions.

8. (Currently Amended) An acidic conversion coating bath composition comprising:

0.020 to 0.075 mole/L chromium (III) ions,
0.010 to 0.035 mole/L cobalt (II) ions,
a film polisher agent, and
about 0.010 to 0.045 mole/L nitrate ions,

said composition including a ratio of nitrate ions to the combination of chromium (III) and cobalt (II) ions of less than 1.5:1, being substantially free of chromium (VI) ions and substantially free of oxidizing agents other than said nitrate ions.

9. (Original) The composition of claim 8 wherein said film polishing agent comprises fluoride ions.

10. (Original) The composition of claim 8 having a pH between 1.5-3.0.

11. (Currently Amended) A concentrate for forming a conversion coating bath comprising:

chromium (III),
cobalt (II), and
nitric acid,

wherein said concentrate is acidic, is substantially free of chromium (VI) ions, is substantially free of oxidizing agents other than said nitric acid, and includes less than a 1.5 to 1 ratio of nitric acid to chromium (III) plus cobalt (II).

12. (Currently Amended) A method for applying a conversion coating onto an article comprising the steps of:

plating the article with zinc, and

exposing the article to an acidic conversion coating composition comprising water, chromium (III) ions, cobalt (II) ions, fluoride ions, and nitrate ions, said conversion coating being substantially free of chromium (VI) ions and substantially free of oxidizing agents other than said nitrate ions, and including a ratio of nitrate ions to chromium (III) and cobalt (II) ions of less than 1.5:1.

13. (Original) The method of claim 12 wherein the coating composition is at a temperature of about 20-40°C.

14. (Previously Presented) The method of claim 12 wherein the step of exposing the article to the conversion coating composition is performed for about 25-75 seconds.

15. (Previously Presented) The method of claim 12 wherein the conversion coating composition comprises:

0.020 to 0.075 mole/L chromium (III) ions,
0.010 to 0.035 mole/L cobalt (II) ions, and
0.010 to 0.045 mole/L nitrate ions.

16. (Currently Amended) A method for applying a colored conversion coating onto an article comprising the steps of:

plating the article with zinc,
exposing the article to a conversion coating composition comprising water, chromium (III) ions, cobalt (II) ions, fluoride ions, and nitrate ions, said conversion coating having a ratio of nitrate ions to the combination of chromium (III) and cobalt (II) ions of less than 1.5:1, and being substantially free of chromium (VI) ions and substantially free of an oxidizing agents other than said nitrate ions,
rinsing the article,
exposing the article to a dye solution, and
rinsing the article.

17. (Original) The method of claim 16 wherein the coating composition is at a temperature of about 20-40°C.

18. (Previously Presented) The method of claim 16 wherein the step of exposing the article to a conversion coating composition is performed for about 25-75 seconds.

19. (Previously Presented) The method of claim 16 wherein the step of rinsing the article after exposing the article to the conversion coating is performed in water having a temperature between about 20-40°C.

20. (Previously Presented) The method of claim 16 wherein the step of exposing the article to a dye solution is performed for about 5-40 seconds.

21. (Original) The method of claim 16 wherein the dye solution is at a temperature of about 20-40°C.

22. (Original) The method of claim 16 wherein the dye solution has a pH between about 9-12.

23. (Original) The method of claim 16 wherein the dye solution includes a Mordant diazo dye and borate ions.

24. (Previously Presented) The method of claim 16 wherein the water of the step of rinsing the article after exposing the article to the conversion coating composition is at a temperature between about 20-60°C.

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)